

after many lives had been sacrificed the works were closed, and the health of the union improved. Five months after a new proprietor opened the premises; some barrels, filled with the putrid matter left by the first, were accidentally broken; the wind blowing from the manufactory, a stench filled the workhouse, and forty-five of the boys were again suddenly seized with severe diarrhoea!

The condition of the dwellings of the poor has engaged the anxious consideration of the association. "They felt, that whatever amount of good was to be effected by sewerage and drainage, by extramural burial, by better constructed houses and streets, by an abundant supply of pure water, and other sanitary improvements, there was an urgent necessity for bringing directly home, in a prompt and efficacious manner, to the existing dwellings of the poor, those sanitary improvements which increased knowledge, ability, and appliances have placed within our reach. The condition of the dwellings of the poor and of the industrial classes is a chief cause of the excess of deaths and of the prevalence of disease, poverty, immorality, and crime in the metropolis."

The physical circumstances in and around a dwelling are a measure of the health and comfort of the tenants. Where there is manifest unfitness for healthy existence there can be no home—no permanent happiness—no self-respect, or moral elevation of character. Disease must come, and with it a whole train of depressing, vitiating, and pauperising influences.*

"The example set by those interested in improving the dwellings of the poor, has hitherto been followed, in various parts of the metropolis, by few individuals only: the total result, up to the present time, is that which has been just stated. The public, therefore, for many years—perhaps for a century—cannot look for a sufficiency of healthy dwellings, if they are to trust to the operations and influence of voluntary associations alone. The force of example operates but slowly; the knowledge of economical sanitary arrangements does not rapidly spread; the customs and prejudices of society are stubborn and unchangeable;—while disease is persistent; the sacrifice of life constant; the evil great; the remedy by voluntary changes remote; and the necessity for immediate changes all-powerful.

The Association contend it is the bounden duty of Government to step in and afford to the public that security which it is utterly out of their own power by any knowledge, ability, or forethought of their own to obtain for themselves."

The Association appear to have been prompted in their inquiries and remarks solely by an anxious desire to promote the common

welfare by leading to the adoption of measures for promoting the public health, and we think they fully deserve the hearty co-operation of all who would lessen sufferings, promote the happiness of their fellows, and save the fearful amount of life, power, and money now annually wasted in this kingdom.

HINTS AS TO DWELLING-HOUSE WINDOWS.

NOTWITHSTANDING the occasional misunderstanding between architects upon subjects and points, it may be presumed that every professional gentleman in England would wish to see a new path struck out, wherein the principles of scientific construction could be pleasingly displayed. By this I do not mean some new style, dissimilar to all former ones; but an order steadily progressing from the styles which have existed, and, like them, based upon incontrovertible principles. The shortest way to a truthful development of accurate designing is, perhaps, within the reach of every architect. And, like many efforts at improvement, the means of reform are within the reach of the reformer's hand, without the necessity of propounding theories or making designs which are as ridiculous as they are unmeaning.

The writer at first proposed to himself the analysis of the present manner of constructing dwelling-houses; but having found it difficult to embody in one article such an important subject, and not wishing to treat thereof in an abstract way, he proposes simply to discuss a portion of the subject: this is the window, the principal feature in which is the arch. On this occasion ornament shall be referred to only in a secondary light, presuming the arch to be an indispensable link in the grand chain of construction.

With regard to arches in general, it is necessary that some meaning should be first found for the word, in order not to make it contradictory to itself. The sense in which it is looked upon, in building, is some durable string of materials, cohesively bonded, truly radiated, and finally keyed, in order to carry a superstructure over some opening. Still, an arch may be one simply, without the necessity of carrying any superstructure; but this must be considered as the consequence of an improved condition of the art, and not merely as an idea suggested by necessity. An arch must have an inclination upwards, whatever may be its shape; and in proportion to the weight bearing thereon, it must have equally strong abutments. An axiom can therefore be established, that—

"An arch shall not yield to the superincumbent pressure." Construction follows, suiting materials to the proper form in which each ought to be built; and not giving to one material the seeming but contradictory appearance of another. Reality and truth, in building, have sufficient ornamental results of the loftiest stamp, without calling in to their disgrace the frivolous and expensive decorations generally used, but not belonging thereto; which have been added, time after time, with the best intention, when the architectural spirit of this nation was almost extinguished.

Instead of going back to the dawn of architecture, I shall commence with the present age, and, if necessary, refer backwards. Thus we find ourselves passing from a very debased condition of existing things, over a wilderness of pseudo-architectural rubbish, until we reach the age in which scientific art began to decline. There is, however, one instance whereat the artist is compelled to rest and laugh. In the year 1745, I think, one Batty Langley published a work in London, reducing Gothic principles to five orders, for the purpose of giving them a fixed position. All persons must admit that he did so, with the greatest zeal, to further the spirit of his day, and to re-establish what he thought was the congenial art of his nation. The principal point of failure was, how to make the window, a Gothic one, reconcilable to the wants of the current age. However, now his work looks ridiculous, not contemptible; and whilst the artist smiles at the feeble attempt, he cannot escape the lesson which his publication teaches, that "copying perfection is superior to designing imperfection."

The commonest feature in modern dwelling-houses is the window. Let any person ac-

quainted in the very least degree with construction, look at it, and behold how it is done. He sees a straight camber arch composed of bricks. This is in itself quite contradictory, and made positively so, by filling up the real, and cutting and pointing false joints in rectilinear lines, with imaginary closers; but it is done so, and considered to be a very neat affair in building—one of the *maxima* of modern artificers' work, superior even to the carpenters' boast—whilst in reality it is the most debased idea of the most debased style that could be possibly introduced in the most corrupt and neglected age.

It is not worth the consideration of a moment to inquire when this sort of window-head was first used, but it must be perfectly modern, because we cannot find arches of that description in any of our old mansions or smaller houses. All square openings, in houses of residence, for a long period, had lintels of wood, and the few found in churches had stone lintels. In some old houses we find narrow segmental brick arches turned over these lintels, and also over the space occupied by the projecting window. Thus are such old houses correctly constructed, and the flat wooden or stone window-heads must also be correct. Wooden lintels are not displeasing to the eye, as they are used through necessity to carry the superstructure; and more so because the mind is satisfied that they can support the weight, which is not the case with reference to the brick camber arch. Wooden lintels may be even tastefully introduced with satisfaction; and if done so on a liberal scale, may be ornamented to superfluity. Stone is the truthful maintenance of an opening, and the eye is not deceived in it, because we know that stone will retain its durability. The principle is also founded on the examples of antiquity, back to a rude and even a primitive age.

A question may here arise that as iron is now being generally used, and so easily cast to any form at a cheap rate, why not make use of it in window arches, and give it the shape we desire it to have in our designs? The answer thereto is derived from the very maxim which we now endeavour to establish in architecture—that every material should without any discolouration represent itself. There is no individual in existence who would wish to see iron in his residence as a prominent feature, either in its primitive nudity, or painted so as to exactly represent iron. But there is a more absolute reason for rejecting it: iron will not bond. It is not a building material, because it will not enter into cohesion with building materials in general by mortar or cement. And though it is a good bearer, it can never look well to the eye, for the mind naturally rejects all incongruities, even when the design is flattering.

The general figure of all windows, in our present dwelling-houses, is rectangular; and if questioned thereon as to the probability of making any laudable change, so as to give the structure an unique appearance, architects, in general, will tell you it is impossible. They are limited to thirteen, twelve, eleven, and sometimes ten feet of story. This is the reason also that places square-headed windows, surmounted by brick camber arches, and a doorway with a semicircular or an elliptical head, in the same building; because they are compelled, by necessity, to give as much light as they can: in a low story they must do so at the expense of every rational and geometrical principle.

Still they contrive to design square windows with a tolerable degree of variety. Sometimes the ground-floor windows are made strangely long, whilst those of the chamber floor, which may not differ 6 inches in height from the lower one, are not so tall by one-fourth. Occasionally the chamber lights are made 6 inches narrower, to give a sort of proportion to them. The chamber openings are sometimes longer, and those of the ground-floor give that story the appearance of a basement. The sills of the windows are often continued round two fronts, like a string; but many architects only use simple sills, and introduce an independent stone table, at 18 inches below them. But the staircase window differs from all the rest—a long, narrow, ecclesiastical-looking thing, with a semicircular head.

Another variety has been introduced into the brick camber arch, by those who fancied they were doing so to give it a good effect; and

* The want of proper elements is felt very severely in our large towns. Take the following letter as an illustration, just now received from Manchester—

"I am in the present condition of the sanitary question, it may not be amiss to call attention to the following state of things which exists in this great centre of civilisation—the metropolis, perhaps, in importance to the metropolis itself. I have lived for several years in houses in and about Manchester, the rents of which vary from 30s. to 40s., taxes 7s. or 8s. But in no house at either of these rents that ever I have been in was there such a thing as a water-closet. The only miserable substitute provided in my present house, and in all others in the district, is a . . . I occupy a manufacturing establishment in the centre of this city, capable of employing eighty workmen. No provision of any kind for this purpose has been ever made. I have agitated both my landlords on this subject for four years, and cannot get it done. They will neither grant me a loan nor go to the cost themselves (though I offered one of them 75 per cent. on his outlay, whatever it might be), but they want to drive me, the tenant, into doing it at my cost, with a view, possibly, to raise the rent as soon as done. Does not this call loudly for compulsory enactment? Pray, Mr. Builder, do raise your powerful voice, and let not the nineteenth century (now half run through) die away under such a reproach. To do good we must pass through evil; and as it seems to be necessary even on this disagreeable subject. In a large city like Manchester there will be numbers of persons, of both sexes, brought up with refined ideas and habits, but on whom fortune has not smiled so much as to entitle them to enable them, with honesty, to occupy houses at higher rents. It has stirred up the gall within me to pass through a most expensive prison lately erected (partly at my expense), to see these decrees provided for malefactors which I cannot obtain myself.—W."